SERIES-MOVERS BY AUSTRALIAN PROBLEMISTS

A Comprehensive Anthology

GRAPHICS

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This book is gratefully and wholeheartedly dedicated to

BOB MEADLEY

a man of boundless encouragement who has a profound sense of history,

without whom the Australian chess problem tradition

would today scarcely exist;

and

to the memory of

BRIAN TOMSON

a great Australian problemist,

a true artist in the field of series-movers.

ACKNOWLEDGEMENTS

We wish to express our gratitude to the many problemists – all valued colleagues and friends – and institutions who have assisted us in the formulation of this work. Without their encouragement and support, their assistance in providing various source materials, and an impressive input of ideas, this project would not have borne fruit:

LIST OF NAMES (AND JOBS DONE) HERE

In addition, we would like to thank specifically our own families – for their forbearance.

We do apologize in advance for any inadvertent omissions.

Ian Shanahan and Arthur Willmott, July 1995.

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PROLOGUE

In seeking to justify its existence, the following cynical question might well arise in the mind of a fictitious somebody who has just acquired this book:

“Frankly, given the relative sparseness of the Australian chess problem fraternity at the international level, why would anyone wish to compile an encyclopaedic anthology of series-mover compositions by Australian chess problemists?”

Now aside from the obvious reply that the problems themselves (one hopes) vindicate the authors’ labours, let us look at the Australian context itself. It is an interesting quirk of fate that, despite the paucity of active problemists in Australia at any given time, a surprisingly large percentage of us since the 1960s have composed – and still continue to compose – series-movers, several of which have even received significant tourney honours or have set some new task record. Considered solely on a *per capita* basis, then, Australia could rightly be regarded as the world hub of series-mover composition!

Nor in the complementary field of chess problem scholarship has the Australian contingent been idle. Several important articles devoted to series-movers have been written by Australian problemists; the reprinting of all of these essays (in chronological order), together with a detailed report on a series-mover theme tourney held in **Chess in Australia** during the late 1980s, comprises the second half of this anthology.

Moreover, one can argue that the publication of this volume – it is, we believe, only the second book to address series-movers exclusively (after **The Serieshelpmate** by John M. Rice and Anthony Dickins [2nd edition, Kew Gardens, England, 1978]) – fulfils a worthwhile function because it marshals together under the same umbrella many elegant series-movers that would otherwise be unjustly consigned to oblivion, having made their public debut in some obscure or provincial outlet (embracing only a very limited readership beyond these shores) like **Chess in Australia** or the more recent **Australian Chess Problem Magazine**, with little likelihood of being seen again elsewhere. But we feel that our present collection of chess problems is also quite timely: at the risk of evoking pessimism, it does seem that most, if not all, of the ‘classical’ series-mover themes and genres – many of which, you will soon find, have already been tackled by Australians – are perhaps nearing exhaustion ... or they are at least in rapid decline. (For instance, certain ‘ultimate tasks’, such as eight promotions in one line of play, have now been conquered.) Maybe the Golden Age of series-mover composition is almost over, in which case *now* is the best time to begin documenting it.

Yet rather than merely making a careful and safe selection of 'the best series-movers from Down Under', we have (as the subtitle of this compendium asserts) aimed for total comprehensiveness. Such an unmediated approach permits an accurate appraisal of Australian achievement in this artistic sphere: as a means of juxtaposing our local *oeuvre* with those of the European, British and American arenas, the variegation of Australian series-mover composition – encompassing the full gamut of its strengths *and* weaknesses – is put on display herein. In particular, by sectionalizing the first half of this book alphabetically by composer, the distinctive thematic tastes and individual personality of each problemist are brought to the fore. To this end, wherever possible, we have asked the composers to introduce themselves, in their own words, through a brief biographical profile (including an enunciation of their own credo of chess problem aesthetics), without any editorial intervention on our part; such personal statements inject a human touch which is sorely missed from many chess problem books.

Furthermore, unlike T. R. Dawson, who in the Introduction to his **Caissa's Wild Roses** declares that "... solutions and comments follow immediately below the various groups of diagrams. This is not a collection of puzzles to solve but a booklet to read ...", we have elected instead to segregate all problem diagrams from their solutions and commentary. The authors offer two cogent reasons for this arrangement. We do wish to encourage you, the reader, to experience the pleasure of solving these problems for yourself. (In so doing, you might even discern in a problem some fatal flaw, such as an inaccurate alternative solution, that has eluded its composer – and everyone else!) But whenever the solutions are consulted, it will prove most convenient for you to set up a problem's position on a chessboard in order to play through its solution *physically* (rather than in the mind's eye alone, through repeated reference back to the printed diagram), thus ensuring that, in carrying out an assiduous examination of the problem, no thematic or constructional details shall be overlooked.

@@@@@@

What of the series-mover's future? One cannot begin to muse upon the genre's prospective directions without attempting a synopsis of its evolution over the past fifteen years or so.

Since the advent of the 2nd edition of **The Serieshelpmate** in 1978, composers of series-movers have increasingly explored other quasi-orthodox stipulations besides the normative series-helpmate: the *series-selfmate*, the *series-reflexmate*, and the *series-mate* have all been enthusiastically adopted; and along with the standard aim of 'mate', the alternative goals of *stalemate* and, to a much lesser extent, *check* and *double-stalemate* are now also approaching ubiquity. Later trends include tentative steps towards the *reciprocal series-helpmate* (wherein *either* side may be mated after a helpful sequence of moves has been acquitted; this form was inaugurated by the Spanish problemist Manuel Munoz in 1986) and the development in earnest of *double series* (in which one progression of moves is played by one side, leading to a progression of moves by the other side) – a speciality of one of the authors, Arthur Willmott.

In passing, it should be noted that quite recently (within the January 1995 issue of his **Australian Chess Problem Magazine**), Arthur Willmott has pioneered a logical expansion of the abovementioned *double series* scheme into *triple series* through what is most likely the first publication ever of a *triple-series-selfstalemate*. His brave foray could lead, eventually, to the widespread composition of *multiple series* problems of breathtaking complexity.

Meanwhile, from the mid-1980s, the renowned Australian problemist Peter Wong has been successfully experimenting with the exotic yet immensely promising area of *series-retractors*: labyrinthine series-movers which unfold backwards, with time flowing in reverse, so that 'uncaptures' and 'unpromotions' might occur! Nevertheless, the even vaster universe of *retrograde analysis* – wherein prior play in some hypothetical test-game to a key position must be taken into account – is still at an incipient stage insofar as it has been applied to the series-mover.

On the other hand, *multi-phase* series-movers incorporating more than one line of play (in multiple-solution, 'twin', or 'try-and-solution' format), have begun to grow in popularity, and are at last being seriously investigated. Their 'phases' are usually conceived to harmonize, although not a few problemists instead deliberately cultivate diverse thematic contents.

Apart from the ongoing pursuit of series-mover *tasks* (especially in the establishment of new promotion or length records), expert composers still continue to strive for ever more perfect construction in all of their problems; as a reward for their struggles, they often obtain remarkably intensive and economical settings of extant themes. This positive state of affairs is ameliorated by the almost symbiotic relationship many problemists now seem to be having with their personal computers: the salutary impact of digital technology is of course also demonstrated through the composition, with the aid of a computer, of fresh or artistically enhanced *blends* of old ideas, and – equally importantly – through the bold computer-assisted realization of extraordinarily ambitious concepts that are arguably beyond the scope of any human problemist working alone. In this anthology, such audacious cybernetic endeavours are evinced by the recent efforts of Geoffrey Foster, who, during the early 1980s (having been inspired by a study of the mathematics of Game Theory), devised an astute algorithmic process for composing 'piece-shuffle' series-movers. Yet it was only this year that Foster automated his technique by writing a computer program, **WOMBAT** (whose acronymous name [**W**ork **O**ut **M**atrix **B**y **A**lgorithmic **T**rial] also highlights its Australian origins by alluding to a unique local marsupial!). Anyway, a number of exceedingly beautiful man/machine-generated 'follow-my-leader' specimens have thus far emerged; an original article by Foster on this subject, illustrated by some of his series-movers created over a five-month period from March to July 1995 with the help of **WOMBAT**, makes its first appearance herein.

However ... Irrespective of the boon of the computer, there may not in fact be a great deal left to be accomplished henceforth within the ambitus of the 'normal' series-mover. Should this conjecture be true (as current tendencies imply), problemists will therefore become compelled, eventually, to search farther afield – well beyond the domain of regular chess derivatives – in order to attain any novelty. The future of the series-mover apparently belongs to its potentially infinite proliferation of non-standard *Fairy* offshoots, all of which utilize unorthodox pieces, boards, and/or stipulations. But this prediction is not necessarily inauspicious, for one must always remember that the artistic possibilities of problem composition are only ever bounded by the limits of our problemists' skill, discipline and imagination.

Finally, in writing this book, it has always been the authors' intention to render its *raison d'être* – its assembly of Australian series-mover chess problems – comprehensible to the broadest possible spectrum of the public. In order to glean maximal understanding and enjoyment of these compositions, the only prerequisite we expect from our readers is a sound knowledge of the Rules of Chess – no more. So, let us now commence proceedings with the basics of series-movers...

Ian Shanahan

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INTRODUCTION

– Conventions.

– Definitions. Note inherent differences between the various series-move genres. e.g. soundness and economy: stalemates are basically easier to get sound than mates, and tend to be more economical, because *all* the units of one side need to be immobilised (whereas only the King is mated); series-self(stale)mates likewise (because *both* sides must be carefully controlled, and help-play is sometimes *too* cooperative!); and Ser.-S≠/=s often seem to require fewer units than their help-play counterparts in order to present the same theme (e.g. AUW). Also, both Ks need to be controlled.

– Explanation of themes, including a Glossary of Terms and Fairy Variants (or ... a "Glossary of Fairy Variants" could easily be marshalled into a separate chapter, after the Introduction; include Fairy variants with the problems themselves).

– A brief explanation of Forsyth notation (maybe this should appear earlier, particularly if problems are to be quoted in Forsyth in the Preface).

– An Important Request: because many problems herein are originals – or at least they have not been exposed much to the wider world of chess problem solving before – and/or are in media (stipulations) that are difficult to get sound or are not (yet) computer-testable (e.g. double- and triple-series, etc.), issue a plea for readers to test the problems and report any flaws they find to me at my e-mail address (given initially with the book's publication details).

* Abbreviations

* Solutions and Commentary

NB: for each problem in Parts A and B (wherever possible), I would include:

– the full solution;

– solvers' and/or judge's remarks;

– additional comments, by ourselves and/or the composer, regarding construction, 'mechanisms', and thematic contents etc.

* Index

I envisage a full index in three parts:

1. By composer, alphabetically, giving both problem numbers and page numbers.

2. A thematic index, referring to problem numbers.

3. An index by stipulation.
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ADDITIONS TO AW'S LIST (RUINED PROBLEMS OMITTED):

Bob Meadley

Bob Meadley: **Sunday Mirror** [Sydney], August 16, 1970. "The Minuet"
24 / 4p3 / 4p3 / 6B1 / r7 / Rbk1K3. Ser.-H≠8.
6.Kg1 7.Rg2 8.Ba2, 0-0-0≠.

The two-fold purpose of the bPe4 is clear (it forces the bK to 'dance' a unique route to g1, and also 8.Ba2), but what is the function of the bPe5? *NOTE: bPe5 can be omitted (it serves no function whatsoever), so print as such – 'version' – mentioning that bPe5 was originally there.*

1. **Chess in Australia** {1976-1994}

Brian Tomson and Robert Shearer: **Chess in Australia**, December 1981.
16 / 2P5 / 8 / 2KP1R2 / 2B5 / 4k3 / 5s2. Ser.-H≠15.
2.Sf3 4.Kg3 6.Sg4 8.Kg5 10.Sf5 12.Ke6 13.S×d4 14.Sf5 15.Se7, Rf6≠.
Ideal mate.

Brian Tomson: **Chess in Australia**, April 1982.
S7 / 1K4p1 / 5pP1 / 8 / k1p2P2 / p7 / 1p6 / 8. Ser.-H≠21.
3.Pc1S 4.Sb3 5.Pb1Q 6.Q×g6 7.Qg4 9.gf 12.Pf1R 14.Ra5 19.Pf1B 20.Bb5 21.Qb4, Sb6≠.
AUW.

Add P.W.: **Chess in Australia**, November 1987, No.38 to the list: this is No.19 in P.W.'s book. I see no reason to exclude series-retractors!

A.W.: **Chess in Australia**, November 1988 was cooked by Bob Meadley; your correction appeared in Chess in Australia, January 1989. *With A.W.'s published problems.*

2. **The Problemist** {1970-1974} and **The Problemist Supplement** {No.1– }

% B.T., **The Problemist**, January 1984, F731 was quoted as No.186 in John Nunn's Solving in Style.

% G.F., **The Problemist**, May 1984, F747*v* was corrected (November 1984): bBe6; remove Pc6 (solution unchanged). Also, F747v received *1st Honourable Mention*, but this was bumped up to *3rd Prize* when a higher problem was downgraded because of anticipation (January 1986, p.130).

% G.F., **The Problemist**, May 1985, F810*v* was corrected (January 1986): remove d6, h4; add wPc4, bPc5 (solution unchanged). Also, F810v received *5th Commendation*. *Arthur claims that part (b) is still cooked. Check with Geoff.*

% N.N., **The Problemist**, September 1985, F834*v* – 'version' *not* because it was "cooked" (see May 1986, where N.N. shows how the alleged cook fails), but because of the judge's amendment: wPf2 to f6; Ser.-S≠7, 2 solutions, which *is* better (economy of time; formal clarity). Also, F834v received *1st Commendation*.

% G.F., **The Problemist**, July 1986, F882*v* was corrected (March 1987): 8 / 2p5 /

1PP2pB1 / 5P2 / 4K2p / 3p1rp1 / 3P1ppq / 2S1Skbr (solution basically unchanged, but 36.K×b6, etc.).

% Add P.W., Prize **The Problemist**, March 1990, F1148 to the list. (See the tourney award, May 1992, p.49.)

% A.W., **The Problemist**, March 1991, F1211 was cooked (September 1991, p.416) but was not reported as having been corrected. Have you since fixed it? *Correction with A.W.'s published problems.*

% A.W., **The Problemist**, January-March 1992, F1288 was cooked. Have you since corrected this? *NO!*

% Add P.W., **The Problemist**, July 1994, F1478 to the list. Being the person who tested this for Peter – I actually provided an exhaustive, mathematical type of proof of soundness – I am pretty confident that it is, in fact, sound! (But, we'll see...) Furthermore, F1478 appeared after Peter's book was published.

% A.W., **The Problemist Supplement**, March 1993, PS107 was cooked. Have you since corrected this? *Correction with A.W.'s published problems? YES – on butchers' paper inside photocopied booklet: "No.17".*

3. **Chessics** {Nos.1-30 [complete]}

% B.T., **Chessics** No.20, 1984, No.92 was cooked. I don't think it was ever corrected. *OMIT!*

% Geoffrey Foster, **Chessics** No.25, Spring 1986. [No.161]
3KB1kq / 5pbb / 3p1Ppr / 3P2Sp / 7P / 24. Ser.-H≠10 exactly.
1.Bf8 2.Qg7 3.Kh8 4.Bg8 5.Rh7 6.Qh6 7.Rg7 8.Bh7 9.Rg8 10.Bg7, S×f7≠.
See G.F.'s article "Exact Serieshelpmates" in connection with this problem, **Chessics** No.25, p.105.

4. **Games and Puzzles Journal** {Nos.1-12 [complete]}

% N.N., **Games and Puzzles Journal**, March-April 1988 received *3rd Honourable Mention*.

5. **Australian Chess Problem Magazine**

% Add A.W., **Australian Chess Problem Magazine** No.16, January 1995 (TSer.-S=5) to the list.

B. ADDITIONAL PROBLEMS FROM OTHER SOURCES

1. As yet unpublished positions

2. **British Chess Magazine** {miscellaneous 1964-1970, late 1970s, early 1980s. *Needs to be searched thoroughly – particularly for positions by Brian Tomson – 1970s onwards*.}

% Brian Tomson, **British Chess Magazine**, September 1985. [No.12139]
4k3 / 1S2Rp2 / 6P1 / 5K2 / 4r3 / 8 / 4R1r1 / 8. Ser.-H≠16, Madrasi.
1.Kd7 6.Kf2 8.Rh8 9.Kg3 15.Ke8 16.Rf8, Ke6≠.

Madrasi mate; K rundlauf. Note: this is *not* in B.T.'s book **Fifty Chess Problems**. Also, it was just sheer luck that I acquired this single issue of **British Chess Magazine**: I had to solve this problem myself, and so do not know if it received an award, or whether other solvers found any cooks. (We'll have to find out!) *OK!*

3. **Problem Observer** {No.1 onwards (but with various gaps). I will ask John Ling to check the missing issues for us.}

% Brian Tomson, 2nd Prize **Problem Observer**, March 1985. [O648]
b7 / 1S6 / 2K5 / 7R / k2P3P / 2R5 / 4s3 / 8. Ser.-H≠25.
2.Sb3 4.Kb2 6.Sc2 8.Kd2 10.Sd3 12.K×d4 14.Kd2 16.Sc2 18.Kb2 20.Sb3 22.Ka4 25.S×h4, R×h4≠.
See the tourney award, **Problem Observer**, May 1986.

% Arthur Willmott, **Problem Observer**, November 1994. [O1182] DSer.-H=7.
COOKED – but correction with A.W.'s published problems? YES!

4. **Variant Chess** {Nos.1-9; 13-14. (Peter Wong checked Nos.10-12 and 15.)}

5. **Ideal Mate Review** {No.1 (1983) onwards. Note: besides myself, Peter Wong is the only other Australian to have submitted originals to **Ideal Mate Review**.}

6. Cedric Lytton: **Deceptive Chess Problems** (1983)

% Roy Travers, **Sunday Mirror** [Sydney], 1968.
3bk3 / 5s2 / 4Spb1 / 1r4p1 / 1r1S1s2 / 7P / PPPPPPPQ / 1K1R3R. Ser.-≠3.
Try: 1.Q×c4 2.Qd6 3.Sg7≠. But the position is illegal: the wK cannot get around *both* wQ *and* wR. So assume that White is playing *down* the diagram (rotate it 180°). Then the solution is: 1.Sc4 2.Pf8Q 3.Qf3≠.

7. Peter Wong: **One Hundred Chess Compositions** (1994) {I assume that you already have this?}

% Nos. 47, 48, 52, 56, 61, 88, 90, 94, 96, 100. [10 more problems]

8. Arthur Willmott: **A Selection of Double Series Move Chess Problems** (1994)

% Unpublished problems (i.e. not in any magazine) which you do not intend to have published elsewhere.

% Published examples – those already printed in some problem column – not listed herein. *From Arthur: "... my book of 50, omit Nos.4, 7, 23, and add No.51".*

9. Hanspeter Suwe: **2nd Klein Winsener Rochade-Thematurnier (Complete Home-Base-Castlers): Overview and Prizelist** (1989) {A translation of judge Hanspeter Suwe's remarks (in German) is yet to come from N.N. *NO: N.N. isn't prepared to do it, so either print the German text or get Eric Gross to translate*.}

% Nigel Nettheim, **2nd Klein Winsener Theme Tourney**, 1988. [No.19]
8 / 4pp2 / 2b1k3 / 2b1p3 / 3r4 / 8 / 7B / 4KBSR. Ser.-S≠6.
2.S×e5 3.Sg4 4.Bh3 5.0-0 6.Sf6+, Rg4≠.

% Nigel Nettheim, **2nd Klein Winsener Theme Tourney**, 1988. [No.21]
7b / 1b3pkP / 6Pp / 7P / 8 / 4B2p / 4P1sp / 4KBSR. Ser.-S≠13.
1.B×g2 3.S×h2 4.0-0 5.Kh1 6.Bg1 10.ef 11.Pf8R 13.Ra7, hg≠.

% Nigel Nettheim (after b. ellinghoven), **2nd Klein Winsener Theme Tourney**, 1988. [No.63]
r3kbsr / 5S2 / 8 / 4K1p1 / 32. Ser.-H≠8.
2.Rag6 3.Sf6 4.Bg7 5.0-0 6.Bh8 7.Rg7 8.Sh7, Ser.-H≠6.
Nigel's problem is an extension of: b. ellinghoven, **feenschach**, 1971: 4kbrs / 5S1r / 8 / 4K3 / 32. Ser.-H≠6. 1.Sf6 2.Bg7 3.0-0 4.Bh8 5.Rg7 6.Sh7, Sh6≠.

10. Brian Tomson: **Fifty Chess Problems** (1983) {I assume that you do *not* have this! Brian's very-limited-edition opuscule includes his output until December 1983; he died June 20, 1986. (Numbers in curly brackets correspond to problems in **Fifty Chess Problems**.)}

% Brian Tomson, **Problem Observer**, September 1980. [O402] {No.24}
8 / 5k2 / 4R3 / 8 / 2p3s1 / 2Pp4 / b7 / 2BK4. Ser.-H≠13.
1.Sf6 3.Kh5 6.Sc2 9.Bc6 11.Se2 13.Bg4, Rh6≠.
Agile bS shields bK once and wK twice: a record (Dr C. C. Lytton). Fine accurate play (D. A. Smedley). Brilliant bS tour (J. K. Hetherington).

% Brian Tomson, Commended **Problem Observer**, May 1981. [O438] {No.31}
24 / 6pK / 8 / 7s / 5Rbr / 7k. Ser.-H≠8.
1.Bf1 2.Rg2 5.Sh4 6.Rh2 7.Bh3 8.Sg2, Rf1≠.
Solvers' comments, and judge's award comments, still needed.

% Brian Tomson, **Problem Observer**, September 1981. [O460] {No.33}
1b4k1 / 2R5 / 5p2 / 2p2p2 / 3S1p2 / 2p1pB2 / 2K1P3 / 8. Ser.-H≠26.
15.B×d4 18.Be7 26.Ka2, Ra7≠.
A paradox that the solution is not shorter: captures of d4 by other units create an impenetrable barrier for the bK, thus preventing his demise.

% Brian Tomson, Commended **British Chess Magazine**, November 1982. [No.11799] {No.40}
kr6 / 2R5 / p2P4 / p7 / p2P4 / p7 / K4P2 / 6B1. Ser.-H≠25.
1.Rb7 5.Kb4 7.Rc5 9.Kd2 11.R×f2 13.Rc5 15.Kb4 17.Rb7 21.Ka8 23.R×d4 25.Rb8, Ra7≠.
Ingenious determination of move order – black must avoid capturing d4 too soon! (ed. N. A. Macleod). The switch of shield roles between R and K is well managed (W. H. Duce). A familiar idea, but the extra R-moves (22-24) add an element of originality (Judge: John M. Rice).
If I recall correctly, Bob Meadley quoted this problem in **Chess in Australia** about 12 years ago.

% Brian Tomson, **British Chess Magazine**, December 1982. [No.11810] {No.42}
8 / 1r6 / 4R3 / 4p3 / 2R5 / 5K1k / 3P2sp / 7b. Ser.-H≠28.
2.Rg4 4.Kh5 5.Rg6 8.Kf8 10.Re7 12.Kd8 14.Rc6 17.Ka5 19.Rb4 21.Ka3 23.Rc2 26.K×d2 28.Re1, Rd6≠.
Best problem of the set (J. Nunn). One or two twists to the familiar conducted tour (D. Nixon). Difficult (J. Tymms).

% Brian Tomson, **Problem Observer**, January 1983. [O531] {No.43}

k7 / 5P2 / K7 / 1s3P2 / 16 / 3P4 / 8. Ser.-S≠14.
5.Pd8B 6.Pf8R 7.Rf6 8.Ba5 9.Rb6 12.Pf8S 14.Sc7+, S×c7≠.
Charming triple underpromotion, but superseded by the same composer in the current **British Chess Magazine** [referring to No.47?] (D. A. Smedley). All the minor promotions with minimal force (M. McDowell). Splendidly accurate (J. K. Hetherington).
Ideal mate. This would be better (and marginally more difficult to solve) as a Ser.-S≠10 with wPd2 on d7: better economy of time.

% Brian Tomson, **feenschach**, May 1983. {No.46}
5RB1 / 8 / 5P1K / 8 / 5PP1 / 6RP / 7r / 7k. Ser.-H≠29.
1.Rg2 3.Kf1 5.Re3 8.Kd4 10.Rf7 13.K×f6 16.Kd4 18.Re3 21.Kf1 23.Rg2 25.Kh1 27.R×h4 29.Rh2, Rf1≠.

% Brian Tomson, **British Chess Magazine**, May 1983. [No.11869] {No.47}
8 / 2p2P2 / 2P5 / 7P / 7s / 1p6 / 1P5K / 5k2. Ser.-S≠21.
3.Ph8R 5.R×b3 6.Rh3 11.Pb8B 12.B×c7 13.Bg3 15.Pc8S 18.Sf2 19.Pf8Q 20.Qf3 21.Sh1+, S×f3≠.
Fine Allumwandlung with unexpected finale (ed. N. A. Macleod). Neat but overfamiliar AUW in series form (C. J. Morse). Difficult (G. Whitehead, M. McDowell).

% Brian Tomson, 6th Commendation **British Chess Magazine**, September 1983. [No.11911v] {No.50}
1q6 / 2p1r3 / 8 / 6r1 / 2S5 / 7k / B5pP / K2Q4. Ser.-S≠17.
1.Se3 2.Bg8 3.Qb3 5.Kc3 6.Sf5 7.Qe6 10.Kf6 11.Qf7 13.Sg6 15.Kh8 16.Se5 17.Qh5+, R×h5≠.
Entertaining and original example of complex multiple K shields (ed. and Judge: Norman A. Macleod). More original [than No.47], with bK placed to ensure surprisingly unique solution (C. J. Morse). wK sails majestically through narrow straight between Scylla and Charybdis (G. Whitehead).
This version first appeared in **Fifty Chess Problems**. Note that if this problem's stipulation were changed to Ser.-S=18, we would then have 17.Sh7 18.Qh5+, R×h5=. Is this a further improvement? (On the other hand, in the Ser.-S≠17, the dual avoidance of the wS at move 16 is quite nice!)

FOLLOW-MY-LEADER PROBLEMS

Geoffrey Foster

First Publication

1. An Introduction to Follow-My-Leader Problems

Some years ago, I came across Diagrams 1 and 2 in Anthony Dickins' **A Guide to Fairy Chess** (2nd edition, Dover Publications, New York, 1971). These problems intrigued me. How were they composed? What other matrices were possible? And – most interesting of all – could the idea be used in a series-mover?

To try to answer the first question, consider Diagram 2. Assume that the files are labelled a, b and c. The final move of the solution will be with the King from b1 to a1. There are thus six possible final positions: King at a1, b1 vacant, Bishop at c2, and the other pieces can be arranged in six different ways. The task is to find the longest sequence of moves leading to one of these six positions. The best way is to take each of the six positions in

turn and work backwards, seeing what this leads to.

As an example, consider the ‘game tree’ below. The top diagram is one of the six possible final positions. As mentioned previously, the final move will be with the King from b1 to a1, so the first move is forced (1.Kb1). The next three moves are also forced (2.Qa1 3.Bb2 4.Kc1). There is then a choice between two moves: 5.Qb1 or 5.Bb1. This is shown by two branches in the tree. If 5.Bb1 is played, then there is another choice between two moves, again shown by two branches in the tree. There are three different positions in level 6 of the tree, these being the three positions which can be reached in six moves.

When constructing a tree of this sort, care must be taken to avoid the same position occurring more than once. If a position has already occurred in an earlier level, then the second occurrence can be crossed off. If the same position occurs twice in the same level, then there are two paths of equal length leading to the top of the tree. Therefore, any problem that uses this position (or any subsequent positions on the same branch) will have two solutions, and so will be unsound. I term such branches ‘dead’ branches. Dead branches must still be continued – even though the resulting positions cannot be used – because they may reveal other dualized branches.

In any game tree, a position will be reached in which every ‘live’ branch has come to a dead end (no pun intended). In the tree begun earlier, such a termination occurs on the 26th level of the tree, in the position shown as Diagram 2. This indicates that there is a single sequence of 26 moves from Diagram 2 leading to the position at the top of the tree. However, to ensure that Diagram 2 is sound, it is necessary to construct a tree for each of the other five possible final positions, making sure that Diagram 2 does not occur on level 26 or before. This task is not as arduous as it first appears, because four of the trees are very short. The remaining tree proves that Diagram 2 is indeed sound.

Inspection of this final tree shows that there is another initial position with a 26-move solution. The alternative position differs from Diagram 2 in that the Queen at c3 and the Bishop at b2 are interchanged. I found it rather strange that there should be two positions leading to a 26-move solution, but the reason for this is not hard to find. In both solutions, the Queen functions only as a Bishop. If the Queen were to be replaced by a Bishop, then the two positions would be identical.

Should you be confused by my discussion of multiple trees, then it is worth noting that all branches can be generated within the one game tree. Simply draw a single tree with the six possible final positions at the top. Such a tree will have two sound positions at level 26: Diagram 2, and an alternative position with the Queen on b2 and the Bishop on c3.

Trees can also be constructed for the matrix of Diagram 1; unfortunately, they establish that Shinkman’s problem is unsound by modern standards. **A Guide to Fairy Chess** and **The Serieshelpmate** both give the same solution to his problem, yet there is an alternative choice for moves 8 to 11.

The creation of game trees to solve or compose chess problems constitutes a ‘proof by exhaustion’. There are said to be over nine million distinct positions after the first six half-moves of a game of chess, but game trees are practicable in follow-my-leader (FML) problems because the number of choices for each move is restricted.

Diagram 3 gives the basic outline for a series-helpmate using the matrix of Diagram 2. There are four arrangements of the Black King, Queen, Rook and Bishops in the north-east corner of the board which allow a mate in one. Two of the positions allow S×f7; the other two allow B×f7. These pieces cannot escape from this corner without destroying

these mates, so the resultant problem is guaranteed to be sound. At this stage, the problem is practically complete: all that needs to be done is to construct four game trees (one for each of the possible final positions) and choose the longest or most interesting solution. Unfortunately, a ten-move solution is the longest which can be used, mainly because the King is confined to the top rank. However, there are several positions which have a nine-move solution, and two of these differ only in the placement of the white-square Bishop. Diagram 4 shows the final problem.

In composing such problems, it is difficult to prevent the pieces from escaping the 'cage' – one of the Bishops being especially awkward to contain. A happy discovery was that in problems where the King moves from corner to corner of the cage, the troublesome Bishop could easily be replaced by another Queen without affecting the solution. (Recall that in the solution to Diagram 2, the Queen functioned merely as a Bishop.) This breakthrough allowed the creation of Diagram 5.

One point I should like to make here is that I did not use diagrams of the positions when constructing the trees for these problems. Instead, on one large sheet of paper, I set out all of the 156 possible positions and numbered these from 1 to 156. On another sheet, for each number, I then wrote beside it the number of those positions which could be reached from it in one move. So when I wanted to construct a tree for a certain position, I would simply look up the position's number on the first sheet and construct a tree using the second sheet. My trees were composed of numbers, not diagrams. When a tree was completed, I would go to the first sheet to find out what the position was. I would therefore finish a problem without knowing its solution, so I was able to enjoy the unusual experience of attempting to solve my own problem!

When composing these problems, it is comforting to have an impenetrable cage, thereby avoiding cooks where the pieces escape. When the problem is at last completed, the composer can then remove those pieces forming the cage which turn out to be superfluous. In many problems – particularly those with short solutions – it is not necessary to have the moving pieces so tightly caged. Diagram 6 is an example.

2. Computer to the rescue

So far, in introducing you to follow-my-leader (FML) series-movers, I have neglected to mention the amount of work involved in composing these problems. Whilst at first it is quite interesting to create a few trees, one eventually becomes bored, as accomplishing the task in full is mundane and very time-consuming. Even after all of the work involved in documenting and numbering each position, it is still very tiresome to have to create yet another tree. So after I composed several problems, I wrote a preliminary version of this article, but I soon put the whole thing away and decided to forget about FML problems.

Years later (sometime during November 1994), I received a phone-call from Ian Shanahan, who asked me for biographical information for this book. I sent him the article and he came up with Diagram 7, using a new matrix. The work involved in this was truly stupendous, with 480 positions to be carefully tabulated! Ian later told me that it took him over 200 hours to compose his problem.

Ian's new matrix has many promotion possibilities, but it would be truly beyond human limits to create the necessary trees 'by hand'. I therefore decided to write a computer program which, given a position, would create its game tree. The result was **WOMBAT** (**W**ork **O**ut **M**atrix **B**y **A**lgorithmic **T**rial). My program assumes that the pieces are Black, and are moving down the board. As well as the initial position, one needs to specify any illegal positions, and whether the program is to search forwards or backwards. If

WOMBAT is searching forwards, then Pawns can promote on the first rank. If it is searching backwards, then pieces can unpromote to Pawns! (In this case, one also tells **WOMBAT** the files on which unpromotions can take place.)

The basic method used by **WOMBAT** to generate a new level of the game tree is as follows. It takes every position from the previous level of the tree in turn. For each of these positions, it finds the empty square(s). For each piece which can legally move to the empty square, this move leads to one position on the new level of the tree.

If there are no promotions or unpromotions, then **WOMBAT** can produce a game tree almost instantly. It is still fairly quick even with unpromotions, but promotions take much longer because there are four types of piece which must be considered. It is also much slower if there is more than one empty square. (The slower trees typically reach a stage [after about fifteen moves] when there are thousands of positions in the current level of the tree, and **WOMBAT** takes many hours to produce each succeeding level. There are numerous ways in which its performance could be improved, but **WOMBAT** was written essentially to help me compose a few problems, not as a commercial computer program.)

Diagram 8 is the final position of a series-helpmate, the mating move being R×a4. All mobile pieces are confined to the cage, with the exception of the Knight – which can easily escape and cook the problem. This means that if the problem is to be of a reasonable length, then the Knight will be the result of a promotion during the play. To proceed, we give **WOMBAT** the position in Diagram 8 and work backwards. The piece on a1 can be a Queen, Rook or Bishop (a Knight would certainly introduce cooks), so there are actually three starting positions. We inform **WOMBAT** of all the illegal positions, such as Rook on b1 with c1 vacant; we also specify that **WOMBAT** is to search backwards (with unpromotions being allowed on the a- and b-files). Diagram 9 is reached on the 19th level of the tree. This problem is excellent, but did the composer consider the possibility of a Bishop promotion on b1, as in Diagram 10?

In Diagram 11, Black wishes to manoeuvre a Rook out of the a1-b5 rectangular area in the south-west corner. The pieces at b1, a2 and b5 won't move during the course of the solution, so promotions can be ruled out. The final position before the Rook escapes will have a Rook on a4 and a Pawn on a3, with a5 being empty. The piece on b4 will have just vacated a5. A Bishop is soon ruled out, so the Queen will be at b4. For the longest solution, the b-file Pawn will be on b2. This leaves the other Rook on b3 and the Bishop on a1. Starting with the above position and working backwards, **WOMBAT** gives one other position of equal length. (This position has the Bishop on a1, Rooks on b2 and b3, the Queen on a3, and a4 vacant; the solutions are identical after the first 2 moves.) So **WOMBAT** indeed confirms that Diagram 11 is the best position available.

Diagram ($) was the first-prize winner of a theme tourney for series-helpstalemates with minimal White force and a set mate. Koludrovic's position is very complex, so it seems best to commence an analysis of it with a simpler matrix. One doesn't need a computer to arrive at Diagram ($+1), which shows the idea in its most basic form.

Moving on to the next level of complexity, Diagram ($+2) shows the scheme for the required final position. There will also be Black pieces on a1, a2 and a3, but if one of these is a Knight, then it must be on a1. **WOMBAT** is given the starting positions and instructed to work backwards. There are a number of illegal positions, such as Bishop on b2 with c3 vacant. The position which we are seeking will have Pawns on b3 and c2; otherwise, the requirements are the same as for the starting positions. Diagram ($+3) is the problem resulting from **WOMBAT**'s systematic search.

Diagram ($+4) illustrates an even higher level of thematic complexity. With this matrix, there are very many more possible positions. **WOMBAT** was not designed to handle matrices of such complexity – and so we begin to reach some limits of computer memory. For example, **WOMBAT** retains *all* of the previous positions (instead of just those in the latest two or three levels of the game tree) so that the program rapidly consumes memory. I use a mainframe computer with a 130 megabyte virtual memory limit, but even this is exhausted when there are several million distinct positions in the game tree!

It may appear that we cannot use **WOMBAT** to examine the matrix of Diagram ($), but in fact the situation is not entirely hopeless. A glance at the solutions of these problems shows that the only piece which goes to e1 or e3 (or their equivalents in the simpler problems) is the promoted Rook. By assuming that this will always be the case, the number of positional possibilities is markedly reduced, and **WOMBAT** can now cope. It turns out that there are some problems with even longer solutions than Diagram ($); these, however, all have inherent cooks where the Bishop at d1 flees the cage. Diagram ($) is therefore the best available position with this matrix.

Using **WOMBAT**, FML series-movers now become incredibly addictive. The potentialities are almost boundless, especially in the areas of twins, multiple solutions and promotions. Although **WOMBAT** was created more as an exercise in computer programming than as an aid to chess problem composition, the next section will show some of the series-movers which it helped me to produce.

3.

It is possible to generate hundreds of sound problems based upon the matrix of Diagram 7. Diagram 12 is an example of promotions to different pieces in two solutions. Diagram 13 is one of the prettiest series-movers you will ever see, and I was thrilled when **WOMBAT** first revealed it to me.

Diagrams 14, 15, and 16 each demonstrate four promotions. Because of the h-file Pawns, there is the danger of cooks with the Black King being buried on the first rank by Pawns. In order to prevent such cooks, I used a Bishop on f3 which becomes pinned when the Black King moves to h3. One remarkable thing about Diagram 14 is that it is not a strict FML! On move 14, Black plays B×e3 instead of Bf2, to clear e3 for the White Rook. Amazingly, the problem is still sound. If the Pawn on e3 were Black, then it would be a conventional FML, but I greatly prefer it this way. Diagram 15 shows two Queen promotions, while with Diagram 16 I finally achieved an AUW in one line of play. Diagram 17 shows only three promotions, but in two very different solutions.

I do hope that this article results in the production of more FML problems. There are many possibilities with Fairy conditions or pieces, as well as other matrices to examine. The source code for **WOMBAT** (in Pascal or C) is available free of charge to all purchasers of this book, although one would need to be a fairly proficient programmer to make use of it. I would be delighted to hear from other problemists. My address is 20 Allchin Circuit, Kambah ACT 2902, Australia; e-mail: < problem.pot@gmail.com >.